

CLAIMS

What is claimed is:

1. A method for analyzing design elements in a CAD tool design comprising the steps of:
 - 5 for each configuration command in a configuration file:
encoding information in the configuration command to generate a
configuration element;
ordering the configuration element with a sequence number indicating
the order in which the configuration command appeared in the
10 configuration file; and
storing the configuration element in computer memory; and
for each said design element of interest:
applying each of the configuration elements stored in said computer
memory to the design element of interest in an order indicated
15 by the sequence number to analyze the design.
2. The method of claim 1, including the steps of:
 - storing the configuration element in a first list if the configuration
element is a partial specifier;
 - storing the configuration element in a second list if the configuration
20 element is a complete specifier;
 - evaluating each partial specifier in the first list to determine if the
evaluated partial specifier matches the design element of
interest;
 - retrieving the configuration element into a third list if the evaluated
25 partial specifier matches the particular configuration element;
and
retrieving, into the third list, each complete specifier in the second list
that matches the particular configuration element.

3. The method of claim 2, including the step of discarding the third list from said computer memory after the configuration elements therein have been applied to the design element of interest.

4. The method of claim 2, wherein said complete specifier
5 comprises a name of one of said design elements, and wherein said partial specifier comprises a regular expression, that, when evaluated, yields said name.

5. The method of claim 1, wherein the configuration element
comprises design element information, and wherein the design element is
10 selected from the group of design elements consisting of a transistor, a wire, a capacitor, a resistor, a diode, an operational amplifier, a logic gate, a hierarchical sub-design, and a power supply.

6. A method for analyzing design elements in a CAD tool design comprising the steps of:
15 for each configuration command in a configuration file:
encoding information in the configuration command to generate a configuration element;
ordering the configuration element with a sequence number indicating the order in which the configuration command appeared in the
20 configuration file;
storing the configuration element in a first list if the configuration element is a partial specifier; and
storing the configuration element in a second list if the configuration element is a complete specifier;
25 for each said design element of interest:
evaluating each partial specifier in the first list to determine if the evaluated partial specifier matches the design element of interest;

retrieving the configuration element into a third list if the evaluated
partial specifier matches the particular configuration element;
and
retrieving, into the third list, each complete specifier in the second list
5 that matches the particular configuration element;
applying each of the configuration elements in the third list to the
design element of interest in an order indicated by the sequence
number; and
discarding the third list from said computer memory after the
10 configuration elements therein have been applied to the design
element of interest.

7. The method of claim 6, wherein said complete specifier
comprises a name of one of said design elements, and wherein said partial
specifier comprises a regular expression, that, when evaluated, yields said
15 name.

8. A system for analyzing design elements in a CAD tool design
comprising:
a configuration element generator for encoding information in a
configuration command to generate a configuration element
20 associated with at least one of the design elements;
a sequencer coupled to the configuration element generator for tagging
the configuration element with a sequence number;
computer memory, coupled to the sequencer, for storing the
configuration element; and
25 a processor coupled to said computer memory, for applying, to said
design element that is of interest, each stored said configuration
element associated with said design element of interest, in an
order indicated by the sequence number.

9. The system of claim 8, wherein the configuration element generator comprises a controller for generating the configuration element by selecting said configuration command from a configuration file.

10. The system of claim 9, wherein said controller:
5 stores the configuration element in a first list if the configuration element is a partial specifier, and stores the configuration element in a second list if the configuration element is a complete specifier;
evaluates each partial specifier in the first list to determine if the
10 evaluated partial specifier matches the design element of interest;
retrieves the configuration element into the third list if the evaluated partial specifier matches the particular configuration element;
and
15 retrieves, into the third list, each complete specifier in the second list that matches the particular configuration element.

11. The method of claim 10, wherein said complete specifier comprises a name of one of said design elements, and wherein said partial specifier comprises a regular expression, that, when evaluated, yields said
20 name.

12. A system for analyzing design elements in a CAD tool design comprising:
encoding means for encoding information in a configuration command
to generate a configuration element associated with at least one
25 of the design elements;
sequencing means, coupled to said encoding means, for tagging the configuration element with a sequence number;
storage means, coupled to said sequencing means, for storing the configuration element; and

processing means, coupled to said sequencing means and to said storage means, for applying, to said design element that is of interest, each stored said configuration element associated with said design element of interest, in an order indicated by the sequence number, to analyze the design.

13. The system of claim 12, wherein the design element is selected from the group of design elements consisting of a transistor, a wire, a capacitor, a resistor, a diode, an operational amplifier, a logic gate, a hierarchical sub-design, and a power supply.

14. A system for analyzing design elements in a CAD design comprising:
a model generator for receiving design information from a design file to generate the CAD design;
a storage unit coupled to the model generator for storing the CAD design;
a configuration element generator for receiving configuration commands from a configuration file to generate a list of configuration elements associated with specific design elements of the CAD design; and
an analysis engine coupled to the storage unit and to the configuration element generator for analyzing one of the design elements at a time using information in the list of configuration elements.

15. The system of claim 14, wherein the configuration element generator is coupled to the storage unit for storing the configuration elements to allow reuse of the configuration elements as determined by the analysis engine.

16. The system of claim 15, wherein the list of configuration elements is discarded after said one of the design elements is analyzed.

17. The system of claim 16, wherein the design elements are selected from the group consisting of a transistor, a wire, a capacitor, a resistor, a diode, an operational amplifier, a logic gate, a hierarchical sub-design, and a power supply.

5 18. A software product comprising instructions, stored on computer-readable media, wherein the instructions, when executed by a computer, perform steps for analyzing design elements in a CAD tool design, comprising:

for each configuration command in a configuration file:
10 encoding information in the configuration command to generate a configuration element;
ordering the configuration element with a sequence number indicating the order in which the configuration command appeared in the configuration file; and
15 storing the configuration element in computer memory; and
for each said design element of interest:
applying each of the configuration elements stored in said computer memory to the design element of interest in an order indicated by the sequence number to analyze the design.

20 19. The software product of claim 18, including instructions for performing the steps of:
storing the configuration element in a first list if the configuration element is a partial specifier;
storing the configuration element in a second list if the configuration
25 element is a complete specifier;
evaluating each partial specifier in the first list to determine if the evaluated partial specifier matches the design element of interest;
retrieving the configuration element into a third list if the evaluated
30 partial specifier matches the particular configuration element;
and

retrieving, into the third list, each complete specifier in the second list
that matches the particular configuration element.

20. The software product of claim 19, including instructions for
performing the step of discarding the third list from said computer memory
5 after the configuration elements therein have been applied to the design
element of interest.